

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 (Currently Amended). A method for scheduling a fuel split for a gas turbine combustor comprising:

- a. determining a target turbine exhaust temperature corresponding to a desired nitrogen oxide (NOx) at a reference fuel split;
- b. automatically determining an exhaust temperature error based on a comparison between a scheduled turbine exhaust temperature and the target turbine exhaust temperature;
- c. automatically converting the exhaust temperature error to a projected NOx leveling fuel split adjustment for the entire combustor;
- d. automatically adjusting the reference fuel split for the entire combustor using the projected NOx leveling fuel split adjustment, and
- e. automatically applying the adjusted fuel split to determine fuel flow to the entire combustor.

2 (Currently Amended). A method as in claim 1 wherein the target turbine exhaust temperature is determined based on at least one parameter of a group of parameters consisting of specific humidity, compressor inlet pressure loss and turbine exhaust back pressure.

3 (Original). A method as in claim 1 wherein the fuel split level is a plurality of fuel split levels each indicating a portion of fuel flow to one of a plurality of zones of fuel nozzles in the combustor.

4 (Original). A method as in claim 1 wherein steps (b) through (d) are performed in connection with a nitrogen oxide (NOx) leveling algorithm.

5 (Currently Amended). A method ~~as in claim 1~~ for scheduling a fuel split for a gas turbine combustor comprising:

f. determining a target exhaust temperature corresponding to a desired nitrogen oxide (NOx) at a reference fuel split;

g. determining an exhaust temperature error based on a comparison between a scheduled exhaust temperature and the target exhaust temperature;

h. converting the exhaust temperature error to a projected NOx leveling fuel split adjustment;

i. adjusting the reference fuel split using the projected NOx leveling fuel split adjustment; and

applying the adjusted fuel split to determine fuel flow to the combustor.

wherein the conversion of the exhaust temperature error to the projected NOx leveling adjustment further comprises: determining a projected NOx level from the exhaust temperature error; determining an adjusted Q factor as a ratio of a NOx level baseline request and the projected NOx level, and applying the adjusted Q factor to determine the projected NOx level adjustment.

6 (Original). A method as in claim 5 further comprising determining the adjusted NOx level from the exhaust temperature error.

7 (Original). A method as in claim 6 wherein the determination of the adjusted NOx level from the exhaust temperature error further comprises correcting the exhaust temperature error account for a condition of a compressor in the gas turbine, and applying the corrected exhaust temperature error to an empirically derived curve relating corrected exhaust temperature error to the adjusted NOx level.

8 (Original). A method as in claim 7 wherein the condition of the compressor is a temperate of compressed air discharged from the compressor.

9 (Currently Amended). A method as in claim 1 wherein the comparison used to determine the exhaust temperature error is a difference between a scheduled turbine exhaust temperature and the target turbine exhaust temperature, and said difference is the exhaust temperature error.

10-17. (Cancelled).

18 (Currently Amended) A method for scheduling a fuel split for a combustor of a gas turbine comprising:

a. determining a target turbine exhaust temperature corresponding to a desired NOx emission level from the gas turbine at a reference fuel split schedule, wherein the target exhaust temperature is based on at least one parameter of a group of parameters consisting of specific humidity, compressor inlet pressure loss and turbine exhaust back pressure;

b. automatically determining an exhaust temperature error based on a temperature difference between a scheduled turbine exhaust temperature and the target turbine exhaust temperature;

c. automatically converting the exhaust temperature error to a projected NOx level error at the reference fuel schedule for the entire combustor, and

d. automatically converting the projected NOx level error to an adjustment to the reference fuel schedule for the entire combustor.

19 (Original). A method as in claim 18 wherein the adjusted reference fuel split schedule further comprises an adjusted first fuel split indicating a portion of fuel flow to a primary fuel nozzle in the combustor and an adjusted second fuel split indicating a portion of the fuel flow to be mixed with secondary air entering the combustor.

20 (Currently Amended). A method ~~as in claim 18~~ for scheduling a fuel split for a combustor of a gas turbine comprising:

a. determining a target exhaust temperature corresponding to a desired NOx emission level from the gas turbine at a reference fuel split schedule, wherein the target exhaust temperature is based on at least one parameter of a group of parameters consisting of specific humidity, compressor inlet pressure loss and turbine exhaust back pressure;

b. determining an exhaust temperature error based on a temperature difference between a scheduled exhaust temperature and the target exhaust temperature;

c. converting the exhaust temperature error to a projected NOx level error at the reference fuel schedule, and

d. converting the projected NOx level error to an adjustment to the reference fuel schedule;

wherein the reference fuel split schedule is determined for a base load condition at which the gas turbine is operating at full rated power.

21 (Original). A method as in claim 18 wherein steps (b) through (d) are performed in connection with a nitrogen oxide (NOx) leveling algorithm.

22 (Currently Amended). A method ~~as in claim 18~~ for scheduling a fuel split for a combustor of a gas turbine comprising:

a. determining a target exhaust temperature corresponding to a desired NOx emission level from the gas turbine at a reference fuel split schedule, wherein the target exhaust temperature is based on at least one parameter of a group of parameters consisting of specific humidity, compressor inlet pressure loss and turbine exhaust back pressure;

b. determining an exhaust temperature error based on a temperature difference between a scheduled exhaust temperature and the target exhaust temperature;

c. converting the exhaust temperature error to a projected NOx level error at the reference fuel schedule, and

d. converting the projected NOx level error to an adjustment to the reference fuel schedule;

wherein the conversion of the temperature difference further comprises: deriving an adjusted Q factor as a ratio of a NOx base request and an adjusted NOx level derived from the temperature difference; applying the adjusted Q factor to the reference fuel split schedule to generate the adjustment to the reference fuel schedule.